MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2022/ 2023 SESSION (TERM ID 2230)

DSD 5411 – SYSTEMS ANALYSIS AND DESIGN

(DIT)

2 OCTOBER 2023
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of 6 pages.
2. There are **TWO (2)** sections:
   - Section A: Multiple Choice Questions (10 Marks)
   - Section B: Structured Questions (30 Marks)
3. Answer **ALL** questions.
4. Please write your answers in the **Answer Booklet** provided.

SECTION A: MULTIPLE CHOICE QUESTIONS (10 MARKS)

Instructions: Choose the correct answer. Write your answer on the provided Answer Booklet.

1. The following statements are disadvantages of _____ methodology:
   - Customer only sees the final product and could be unhappy.
   - Late changes may lead to over budget
   - Less flexibility and exhaustive documentation.

   A. Scrum
   B. Relational Unified Process (RUP)
   C. Extreme Programming
   D. Waterfall SDLC

2. Which of the following is **FALSE** about Enterprise Resource Planning (ERP) system?

   A. Integrate individual traditional business function into a series of modules.
   B. Improve supply chain management and enhanced business reporting with real-time information.
   C. Freely available including its source code.
   D. Oracle and SAP SE are the leading vendors of ERP Systems

3. Mydin hypermarket is likely to apply _____ as its competitive strategy.

   A. niche market
   B. lower cost production
   C. product differentiation
   D. All of the above.

4. Which group chooses project that most often reflect the larger needs of the organization?

   A. Business unit
   B. Steering committee
   C. Functional manager
   D. Development group

Continued...

5. Which of the following are intangible benefits from the development of IS?

   I. More confidence in decision making and quality
   II. Positive impacts on society
   III. Error reduction
   IV. Cost reduction or avoidance

   A. I and II
   B. I, II and III
   C. III and IV
   D. All of the above.

6. Which of the following is **NOT** the traditional methods of collecting system requirements?

   A. JAD session
   B. Interview users
   C. Observe users
   D. Analyzing business documents

Question 7 to 8 are based on the following description.

A member of a golf club can make many payments of fee. The payment record saves the descriptions of the transaction. The types of the fee are such as membership fee, monthly fee, renewal fee and others.

7. Which of the following are the entities that can be derived from the situation above?

   I. Member
   II. Fee
   III. Payment
   IV. Record

   A. I and II
   B. I, II and III
   C. I, II and IV
   D. All the above.

Continued...

8. Which of the following are good choices for a primary key of a member in the membership system?

   I. Member mobile phone number
   II. Member ID (a unique number generated for the member)
   III. Member MyKad number
   IV. Member passport number

   A. I and II
   B. II only
   C. II, III and IV
   D. All of the above.

9. _____ testing forces the software (or environment) to fail in order to verify that recovery is properly performed.

   A. Recovery
   B. Stress
   C. Security
   D. Performance

10. Training materials are related to which category of deliverable for "Documenting the System, Training and Supporting Users"?

   A. User Testing Plan
   B. User Training Modules
   C. User Support Plan
   D. Documentation

Continued...

SECTION B: STRUCTURED QUESTIONS (30 MARKS)

Instructions: Answer ALL questions. Each question carries 15 marks.

QUESTION 1 [15 MARKS]

As a junior System Analyst, you have been assigned to assist in developing a computerized smart parking application (app). Below is the first draft of the application requirements:

- Users register via the app by entering their profile details such as name, email, phone number and password. The information will be stored in the user's profile record. After successfully registering, a registration confirmation message is generated for the user.
- Users log-in to the app using the email and password they entered during the registration. After verifying the user's email and password, a login confirmation message will be displayed.
- Users can reload credits for the parking and the app automatically direct them to the selected FPX or payment gateway such as Touch & Go, Boost and others. The amount of credits will be stored in the database.
- Adding a new vehicle is a feature in the app that allows users to input their vehicle's plate number. This information will be stored in the user's vehicle record. Users may also delete inactive vehicle plate numbers.
- User can activate parking by selecting the duration (e.g. 30 minutes, 1 hour, etc.) and the vehicle. The app will automatically record the date and time, and deduct the parking fee from the user's credits. Users will receive notifications if their credit is insufficient and when their time is about to end.
- The app generates a transaction history of reloading credits and a parking history (date, time and vehicle). These records are sent to the user via email.

Based on the scenario above:

a. Draw a **Context Diagram** for the application. (3 Marks)

b. Draw a **Data Flow Diagram (level 0)** for the application with general processes, data stores, date flows and sources/sinks. (12 Marks)

[TOTAL 15 MARKS]

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QUESTION 2 [15 MARKS]

a) Form is the most common interaction method between users and a system. **Figure A** is an example of web-based registration form. On the right figure is a result of reviewed and redesigned form. Provide **FIVE (5)** feedback on the new form based on the guideline of interface design and form, such as structuring data entry fields, validation, highlighting and so on. (5 Marks)

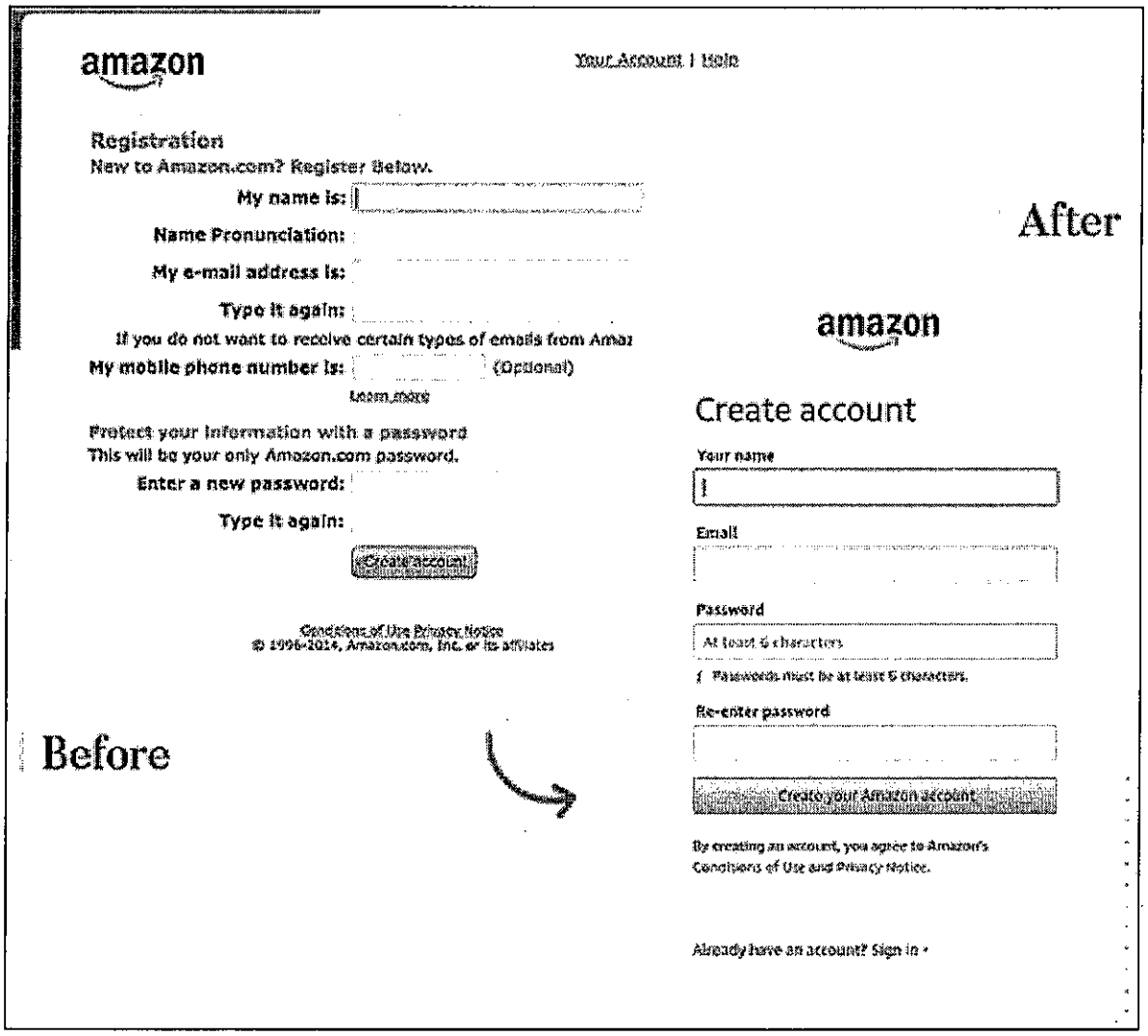

Figure A: Sample of web-based registration form (Source: Medium.com)

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b) Discuss the differences between software application testing and acceptance testing. Provide **TWO (2)** points for each. (4 Marks)

c) Installation is a process of changing over from the current information system to a new one. (4 Marks)

i. Which one from the four strategies do you think is the safest? *[1m]*

ii. Provide **TWO (2)** reasons to support your answer in (i). *[3m]*

d) Maintenance refers to changes made to a system, to fix of enhance its functionality. What is the difference between corrective maintenance and adaptive maintenance? Provide an example for each. (2 Marks)

[TOTAL 15 MARKS]

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